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## CHINA'S OIL AND GAS SECTORS

### Issues and Background

China's oil and gas industry is no longer able to meet the country's burgeoning supply requirements. According to official statistics, China was a net oil importer in 1993 for the first time in more than two decades; "oil" here is defined as crude oil and refined products. Virtually all Western industry observers expect the country to become a net crude oil importer this year. Production at China's three largest crude oil fields—Daqing, Shengli, and Liaohe—which account for 85 percent of the country's production, has shown virtually no growth in the past few years. Indeed, isolated Chinese press articles refer to unspecified production declines at these fields, all of which are more than 25 years old and generally assessed by Western industry observers as intensively developed. At the same time, formidable terrain obstacles, which make pipeline construction difficult, have long prevented widespread exploitation of China's substantial natural gas reserves.

Official statements show that China by the year 2000 wants to boost oil and gas production respectively by 14 percent and 150 percent—or to 3.3 million barrels per day (b/d) and 40 billion cubic meters (bcm)—respectively:

- The Chinese are interested in acquiring Western enhanced oil recovery technology and specialized and advanced drilling equipment to maintain production at its aging fields as well as forming joint ventures to explore and develop geologically and logistically challenging areas.
- In addition, Beijing is attempting to develop new fields offshore, in 11 southeastern provinces, and in the Junggar and Tarim Basins in northwest China. Production from these regions amounts to only a small portion of the country's total, but Beijing regularly claims they hold substantial undiscovered oil and gas resources.
- Sporadic press reports mention that China is conducting feasibility studies on plans to build one or more natural gas pipelines from China's western-most province, Xinjiang, or Central Asia to eastern China and ultimately Japan or Korea; construction of such a pipeline would at minimum cost nearly \$2 billion. Few details are available about project economics, timeframe, or financing, except that China would welcome outside funding.

The Chinese press last year reported that an enhanced oil recovery project at Daqing was successful, generating a large production increase in the study area; no details on the project were provided. Enhanced oil recovery projects could significantly raise the amount of ultimately recoverable oil in China's older fields, but Western industry press reviews of such techniques indicate that they rarely provide a sustained oil production increase and are generally not cost-effective.

Moreover, China's search for substantial new fields has been largely unsuccessful:

- When *offshore oil exploration* began in the mid-1970s both Chinese and Western industry observers expected offshore fields to provide much of China's petroleum requirements by the turn of the century, but results have been disappointing; offshore oil accounted for barely 3-4 percent of total production last year.
- In addition, there has been little foreign industry interest in *onshore blocks in the 11 southeastern provinces*; first opened in 1985, a second round of blocks were offered in February 1994. Western industry geologists believe the region's complex and highly deformed geology means that only small fields exist, according to industry press reports.
- Foreign response to the 1993 opening of the *Tarim Basin* for exploration and development projects was lukewarm at best. Beijing claims that the Tarim Basin holds several hundred billion barrels of "reserves," but industry press reports suggest that actual reserves are probably less than 1 billion barrels scattered over at least 5 fields. Indeed, one oil company official recently described the first-round blocks as "moose pasture," according to a press report.
- *Natural gas* accounts for only two percent of China's energy supply and is unlikely to become a more important source until well after the turn of the century. Proposed pipeline projects from Xinjiang or Central Asia will have to overcome financing hurdles even if large gasfields are found. These projects will be competing for international funding with several more accessible gasfields elsewhere in the world. Moreover, a recent industry press report indicates that negotiations with a major US oil company on a \$400 million joint venture project to develop an offshore gas field near Shanghai may have broken off over tax issues.

**US Angle.** The United States has been the largest foreign player in China's oil and gas sectors for more than a decade and is well placed to benefit from the increasing sales and investment opportunities. US firms' experience in dealing with Chinese oil officials as well as technical expertise is likely to allow them to continue dominating China's market for oil exploration and extraction technologies, particularly seismic survey, heavy drilling equipment, and enhanced oil recovery technologies. The United States holds 65 percent of the market, which may be worth between \$8 and \$10 billion over the next six to 10 years, depending upon how quickly Beijing moves on opening more promising Tarim Basin blocks and constructing pipelines to eastern China.

US oil companies will face strong competition from their West European counterparts for promising offshore blocks, particularly in waters less than 200 meters deep, where their technical capabilities are comparable. US companies have a slight technical advantage in deeper waters, but low world oil prices make deep water projects uneconomical in the near term.